IN THE DRAWINGS:

Please enter the attached corrected drawing Fig. 1 which shows "a plurality of drain lines DL which extend in the Y direction and are arranged in parallel in the X direction in the pixel region AR," to replace Fig. 1 as originally filed. A Letter to Draftsperson is also submitted herewith.

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Official Action dated August 23, 2006. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due consideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 1-3 are under consideration in this application. Claim 1 is being amended, as set forth in the above marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim Applicants' invention.

The specification and the claims are being amended to correct formal errors and/or to better recite or describe the features of the present invention as claimed. All the amendments to the specification and the claims are supported by the specification. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Formality Rejection

The originally filed Fig. 1 was objected to for not showing "a plurality of drain lines DL which extend in the Y direction and are arranged in parallel in the X direction in the pixel region AR except at an edge of the pixel region AR" as recited in the amended specification.

As indicated, the specification is being amended to disclose "a plurality of drain lines DL which extend in the Y direction and are arranged in parallel in the X direction in the pixel region AR ~~except at an edge of the pixel region AR~~" and the Fig. 1 is being revised as now described in the specification. Accordingly, the withdrawal of the outstanding informality rejection is in order, and is therefore respectfully solicited.

Prior Art Rejections

Claims 1 and 3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 6,710,827 to Kubo et al. (hereinafter "Kubo") in view of US Patent No. 6,912,034 to Nagano et al. (hereinafter "Nagano"), and claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubo and Nagano in view of US Patent No. 5,671,027 to Sasano

et al. (hereinafter "Sasano"). These rejections have been carefully considered, but are most respectfully traversed.

Claim 1

The liquid crystal display device of the invention (for example, the embodiment depicted in Figs. 1-3), as now recited in claim 1, comprises a first substrate SUB1 and a second substrate SUB2 which are arranged to face each other with a liquid crystal layer LC therebetween. The first substrate SUB1 includes a plurality of gate lines GLs which extend in a first direction X, a plurality of drain lines DLs which extend in a second direction Y, and holding capacitance lines CL which extend in a first direction X parallel to the gate lines and crossing the drain lines (p. 10, lines 17-19). A pixel and a switching element TFT are provided to a region which is surrounded by two neighboring gate lines out of the plurality of gate lines GLs and two neighboring drain lines out of the plurality of drain lines DLs. The pixel includes a light transmitting region LRA which allows light incident from a back surface of the first substrate SUB1 to pass therethrough and a light reflecting region LRA which allows light incident from the second substrate side to be reflected thereon. The light transmitting region LTA includes a first pixel electrode TPX having the light transmitting property and the light reflecting region LRA includes a second pixel electrode RPX having the light reflecting property. An insulation film and a holding capacitance electrode CT which extends in the second direction Y (Fig. 2; as the drain lines DLs) and is connected to one of the holding capacitance lines CL are provided below the second pixel electrode RPX. The holding capacitance electrode CT is formed on the same layer as the gate lines GLs (Fig. 3 showing a holding capacitance line CL and the gate electrode GT formed on the same layer; *"The holding capacitance electrodes CT and the holding capacitance lines CL are formed in the same step for forming the gate signal lines GL, for example, and are made of aluminum (Al) or an alloy thereof"* p. 14, lines 5-8). A boundary (i.e., the small darken rectangular box LTA in a bigger rectangular box LRA in Fig. 2) between the light transmitting region LTA and the light reflecting region LRA is rectangular shaped and has two first sides extending in the first direction X and two second sides extending in the second direction Y. At least one of the holding capacitance lines CL is formed in an overlapped manner to one of the first sides X, and is formed of a material having a light shielding property. The holding capacitance electrode CT is formed in an overlapped manner to at least one part of the second sides Y, and is formed of a material having a light shielding property (p. 12, lines 16-18).

Applicants respectfully contend that cited references fail to teach or suggest such a "rectangular boundary between the light transmitting region LTA and the light reflecting region LRA (1) with a first side overlapping with a light-shielding holding capacitance lines CL in the first direction X, and (2) with a second side overlapping with a light-shielding holding capacitance electrode CT in the second direction Y" as does the present invention.

In contrast, Kubo's rectangular boundary defined by the transparent electrode 9 and the refection electrode 12 (col. 6, lines 61-62) is located above the alleged holding capacitance line 15 such that it does NOT overlap with the holding capacitance line 15 at all (Fig. 1). Fig. 1 also shows another boundary defined by the transparent electrode 9 and the reflection electrode 12 located below the holding capacitance line 15 which is generally L-shaped with a left lower corner cut off, rather than being rectangular. This boundary does NOT overlap with the holding capacitance line 15 either.

Nagano (Fig. 6) was relied upon by the Examiner (p. 5, last paragraph of the outstanding Office Action) to teach "the holding capacitance electrode is formed in an overlapped manner to a boundary portion between the light transmitting region and the light reflecting region". However, as asserted by the Examiner (p. 6, lines 1-3 of the outstanding Office Action), Nagano's rectangular boundary as defined by the first pixel electrode 1 and the second pixel electrode 2 is located above the alleged storage capacitance line 9 such that it does NOT overlap with the storage capacitance line 9 at all (Fig. 1). As to the light shielding film 25 which is integrally formed with the storage capacitance line 9 (col. 10, lines 15-18), although it has one arm extending in the X direction and overlapping the rectangular boundary, that arm does NOT constitute a holding capacitance lines CL as in the present invention, since that arm does NOT cross any drain lines 4.

Neither Kubo nor Nagano discloses such a "rectangular boundary between the light transmitting region LTA and the light reflecting region LRA with a first side overlapping with a light-shielding holding capacitance lines CL in the first direction X" as recited in claim 1.

Claim 3

The invention is also directed to a liquid crystal display device as recited in claim 3 which includes most elements of claim 1, except the feature of newly introduced claim amendments. In addition, claim 3 recites that an opening which allows the first pixel electrode TPX to be exposed is formed in a region of the insulation film corresponding to the

light transmitting region LTR, and a holding capacitance electrode CL is arranged at a portion corresponding to a side wall surface of the opening of the insulation film.

Applicants respectfully contend that none of the cited references teaches or suggests such an "opening, which allows the first pixel electrode TPX to be exposed, being formed in a region of the insulation film corresponding to the light transmitting region LTR, and a holding capacitance electrode CL is arranged at a portion corresponding to a side wall surface of the opening of the insulation film" as does the invention.

Kubo (Fig. 2) shows openings of the insulation film 11 which expose the transparent electrode 9 to provide light transmitting regions LTR. Nagano (Fig. 6 does NOT provide any opening of the insulation film) was relied upon by the Examiner to compensate for Kubo's deficiencies. However, the proposed combination of references would freeze Kubo's double-mode mechanism, i.e., providing a liquid crystal display device realizing both a transmission mode display and a reflection mode display (col. 9, lines 14-16), which totally destroys its intended purpose such that one skilled in the art would not be motivated to combine the teachings as suggested by the Examiner.

Kubo requires TWO pixel electrodes: a first/transmission pixel electrode (col. 4, line 34) and a second/reflection pixel electrode (col. 4, line 35) to execute both of the transmission mode and the reflection mode. Although Nagano's Embodiment 1 (Fig. 2) shows a first pixel electrode 1 and a second pixel electrode 2, the two pixel electrodes 1, 2 are located in two layers with a large level difference so that areas where the voltage to be applied to the liquid crystal varies within the same pixel (Abstract; col. 1, lines 36-50; col. 2, lines 60-67). Nagano's holding capacitance electrode 9 only has a light shielding film 25 (Fig. 6; Embodiment 3; col. 10), but not any opening of the insulation film for light-transmission. On the other hand, Kubo (Fig. 2) requires an opening/transmission-region on the insulation film to execute both of the transmission mode and the reflection mode.

In particular, Nagano requires the liquid crystal display device to have a structure including areas where a voltage to be applied to a liquid crystal varies in one pixel in order to widen a viewing angle (col. 3, lines 5-8). In Nagano's Figs. 2 & 6, the second pixel electrode 2 is provided above an interlayer insulating film 15 which is provided above the first pixel electrode 1. With such a structure, even if the same voltage is applied to first pixel electrode 1 and the second pixel electrode 2, areas where a voltage (electric field) to be applied to liquid crystal is different can be formed on one pixel. A liquid crystal layer 16 and the interlayer insulating film 15 exist between the first pixel electrode 1 and a counter electrode

20, while the interlayer insulating film 15 does not exist between the second pixel electrode 2 and the counter electrode 20 (Fig. 3). The existence of the interlayer insulating film 15 varies the voltage to be applied to a liquid crystal.

Had an opening which allows the first pixel electrode 1 to be exposed been formed in a region of the interlayer insulating film 15 as suggested by the Examiner, areas where a voltage (electric field) to be applied to liquid crystal is different can NOT be formed on one pixel, since the interlayer insulating film 15 would not exist between the first pixel electrode 1 and the counter electrode 20. Therefore, had the opening been formed, it becomes impossible to widen the viewing angles by varying the voltage to be applied to a liquid crystal. Accordingly, Fig. 2 and Fig. 6 of Nagano cannot include such an opening of the insulation film in Fig. 2 of Kubo as suggested by the Examiner.

Therefore, one skilled in the art would not be motivated to combine Kubo's double-mode/electrode structure (requiring an opening on the insulation film) with Nagano's light-shielding-film without the opening structure shown in Figs. 2 & 6 as asserted by the Examiner (p. 5, last paragraph of the outstanding Office Action), since the resulting changes in structure in Kubo will contradict its intended purpose and principle of operation, i.e., a double-mode/electrode display mechanism.

The cite prior art references and their combinations fail to teach or suggest each and every feature of the present invention as recited in independent claims 1 and 3. As such, the present invention as now claimed is distinguishable and thereby allowable over the rejections raised in the Office Action. The withdrawal of the outstanding prior art rejections is in order, and is respectfully solicited.

Conclusion

In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicants respectfully contend that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance

of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and telephone number indicated below.

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